REMARKS

In the specification, the section headings have been inserted and on page 2, line 2, the patent number was corrected to correspond with the patent number shown on page 1, lines 29 and 30. Minor amendments have been made to the specification and to the Abstract.

Claims 1-9 have been cancelled. Claims 10-24 are submitted herewith in a format acceptable to the United States Patent and Trademark Office. If the Examiner has questions regarding the application or the contents of this Preliminary Amendment, the Examiner is invited to contact the undersigned at the number provided below.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In showing the changes, the material to be deleted is shown as a strike through and the material to be inserted is underlined.

IN THE SPECIFICATION

Paragraph beginning at page 1, line 6, has been amended as follows:

Background of the Invention

The invention relates to a process for the production of transparent finishing coats, in particular the clear lacquer coats of decorative base lacquer/clear lacquer two-coat lacquers and/or of transparent sealing coats on the outer finishing coat of lacquered surfaces of a substrate using radiation-~~cured~~ curable coating agents, and the substrates thus obtained.

Paragraph beginning at page 1, line 12, has been amended as follows:

Processes for the production of multi-coat lacquers by the application of a clear lacquer coat of a radiation-~~cured~~ curable coating agent to a pigmented base lacquer coat and subsequent curing of the clear lacquer coat by the action of actinic radiation are known from EP-A-0 540 884 and WO 98 40 171. Both parent documents disclose clear lacquer compositions including those containing urethane (meth)acrylates.

Paragraph beginning at page 1, line 18, has been amended as follows:

The clear lacquer formulations according to EP-A-0 540 884 and WO 98 40-171 are suitable for the production of scratch-resistant base lacquer/clear lacquer two-coat lacquers, however the flexibility of the two-coat lacquers needs to be improved. The clear lacquers referred to in the examples of EP-A-0 540 884 and WO 98 40 171 have relatively high contents of ~~heavy~~ low or non-volatile reaction thinners which, after application of the clear lacquers, can lead to an undesirable partial dissolution of the base lacquer coats resulting in deviations in colour or effect.

Paragraph beginning on page 1, line 26, has been amended as follows:

A process for the production of multi-coat lacquers by the application of a heat-cured clear lacquer coat to a pigmented base lacquer coat, subsequent heat curing and application of a further clear lacquer coat based on radiation-~~cured~~ curable coating agents, and subsequent curing of the second clear lacquer coat by the action of actinic radiation, is known from EP-A-0 568 967.

Paragraph beginning at page 2, line 1, has been amended as follows:

The demands for scratch resistance of vehicle lacquers are constantly increasing. Multi-coat lacquers produced according to the examples of EP-A-0 568 ~~697~~ 967 are scratch-resistant, but very brittle.

Paragraph beginning at page 2, line 13, has been amended as follows:

Please replace the paragraph beginning at page 2, line 13, with the following rewritten paragraph:

The object can be achieved in that a clear lacquer coat, ~~cured~~ curable by radical polymerisation, is applied to a previously applied colour and/or effect-providing base lacquer coat and/or a transparent coating agent coat is applied to the outer finishing coat of a lacquered substrate surface and this is cured by the action of high-energy radiation, a transparent coating agent being used to apply the outer clear lacquer finishing coat and/or sealing coat, which contains as the substantial or only constituent to its resin solid, an aliphatic urethane (meth)acrylate.

Paragraph beginning at page 2, line 19, has been amended as follows:

Summary of the Invention

The invention therefore provides a process for the production of a base lacquer/clear lacquer two-coat lacquer and/or a transparent sealing coat on the outer finishing coat of a lacquered substrate surface, in which a clear lacquer coat ~~cured~~ curable by radical polymerisation is applied to a previously applied colour and/or effect-providing base lacquer coat and/or a transparent coating agent coat is applied to the outer finishing coat of a lacquered substrate surface and cured by the action of high-energy radiation, characterised in that to apply the outer clear lacquer coat and/or sealing coat, a transparent coating agent is used of which the resin solid consists of:

Paragraph beginning at page 3, line 15, has been amended as follows:

Detailed Description of the Invention

The resin solid of the coating agents used in the process according to the invention to produce the clear lacquer top coat and/or sealing coat consists of binder (component I) and optionally present reactive thinners (component II) in the weight ratio given

above. The term "resin solid" does not take account of the fact that component I or, in particular, component II, may contain volatile portions, for example portions, which are volatile during application or curing of the clear lacquer top coat and/or sealing coat, and thus does not exclude such portions.

Paragraph beginning at page 7, line 26 through page 8, line 4, has been amended as follows:

The resin solid of the clear lacquer coating agents and/or sealing coating agents can contain as component II, 0 to 30, more preferably 0 to 10 wt.% and even more preferably 0 to 5 wt.% of one or more reactive thinners having radically polymerisable olefinic unsaturated groups with calculated molar masses of less than 500 each. It is particularly preferred, if the selected proportion of reactive thinners in the resin solid is low and in particular if there is no reactive thinner in the clear lacquer coating agent and/or sealing coating agent. The reactive thinners of component II are low-molecular compounds, which can be mono-, di- or polyunsaturated. The reactive thinners can be volatile, slow-evaporating or non-volatile compounds. Examples of reactive thinners are: (meth)acrylic acid and its esters, maleic acid and its semi-esters, vinyl acetate, vinyl ether, substituted vinyl ureas, ethylene- and propylene glycol di(meth) acrylate, 1,3- and 1,4-butanediol di(meth) acrylate, vinyl(meth)acrylate, ally(meth)acrylate, glycerine tri-, di- and mono(meth)acrylate, trimethylol propane tri-, di- and mon(meth)acrylate, styrene, vinyl toluene, ~~divynyl~~ divinyl benzene, pentaerythrite tri-, and tetra(meth)acrylate, di- and tripropylene glycol di(meth)acrylate, hexandediol di(meth)acrylate and mixtures thereof.

Paragraph beginning at page 8, line 19, has been amended as follows:

The clear lacquer coating agents ad/or sealing coating agents used in the process according to the invention can contain thermally ~~activated~~ activable radical initiators. Examples of thermolabile radical initiators are: organic peroxides, organic azo compounds or C-C splitting initiators, such as dialkyl peroxides, peroxocarboxylic acids, peroxodicarbonates, peroxide esters, hydroperoxides, ketone peroxides, azo dinitriles or benzopinacolsilylether. They are preferably used in quantities of 0.1 to 5 wt. % in relation to the resin solid.

Paragraph beginning at page 16, line 24, has been amended as follows:

The resin solutions from examples 1a-e and 1h-l are each thinned with butyl acetate to a solids content of 60 wt.% 97 parts by weight of each solution is mixed with 0.1 parts by weight of a radically polymerisable silicon levelling additive, 1 part by weight of a light protection agent (HALS, hindered amine light stabilizer) 0.5 parts by weight of a UV absorber based on ~~benzene~~ benzo triazol, 1 part by weight of a photo-initiator from the alpha hydroxy ketones group and 0.4 parts by weight of a photo-initiator from the acylphosphine oxides group.

IN THE CLAIMS

Claims 1-9 have been canceled.

Claims 10-24 have been added.

IN THE ABSTRACT

Abstract beginning at page 25 line 6, has been amended as follows:

Process for the production of a base lacquer/clear lacquer two-coat lacquer and/or a transparent sealing coat on the outer finishing coat of a lacquered surface of a substrate by application of a transparent coating agent ~~cured~~ curable by radical polymerization and curing by the action of high-energy radiation, a transparent coating agent being used, of which the resin solid consists of:

I. 70 to 100 wt.% radically polymerisable oligo- and/or prepolymers having olefinic groups

II. 0 to 30 wt.% radically polymerisable reactive thinners having olefinic groups, with calculated molar masses of less than 500 each,

wherein 75 to 100 wt.% of component 1 is an aliphatic urethane (meth)acrylate with an average (meth)acryloyl functionality of 3 to 4.5 per molecule and a calculated molecular mass of at least 826, which can be obtained by reacting acyclic aliphatic diisocyanates with 8 C atoms and/or polyisocyanates derived from such diisocyanates with low-molecular aliphatic compounds, which have one or more hydroxyl groups and at the same time one or more (meth)acryloyl groups.